

Live records for Victoria of the bat *Pipistrellus tasmaniensis* (Gould 1858)

BY HAROLD PARNABY*

The Tasmanian Pipistrelle *Pipistrellus tasmaniensis*, one of the largest Australian vespertilionids, has been recorded in Western Australia, Tasmania, New South Wales (Iredale and Troughton 1934) and Queensland (Kirkpatrick 1966).

There has been some confusion regarding the species status in Victoria, perhaps resulting from Wakefield's report of sub-fossil material of this species from the Buchan caves (Wakefield 1967). In a tabulation of the distribution of Australian cave bats, Hamilton-Smith (1964) indicates the live occurrence of the species in this State, but this is a typographical error (Hamilton-Smith, pers. comm.). Ride (1970) lists the species as occurring in southern Victoria; however Wakefield, in an amendment of Ride's Victorian distribution data, states that it has "not been recorded living in Victoria" (Wakefield 1971). The inclusion of the species in the Land Conservation Council's Report of the Melbourne Study Area (1973) appears to be baseless as none of the organisations credited with supplying the data for the mammal list have any records of the species. Its inclusion in an appended mammal list to the LCC's Report of the South Gippsland Study Area—District 1 (1972) is an error (Andrew Thornley, pers. comm.).

Thus the Tasmanian Pipistrelle has only recently been recorded live in Victoria (Brunner *et al* 1976). This note gives some further details of that occurrence made available to the author by Mr. Alex Gilmore of the Fisheries and Wildlife Division, together with reports of captures at two other locations.

Daylesford, 1974-76

A survey of the bat fauna within a 20 km radius of Daylesford (lat. 37° 21' S, long. 144° 09' E) was undertaken over a two-year period from early February 1974 to late February 1976 and resulted in 54 pipistrelle captures (36 ♀ and 18 ♂ which were not individually marked). Five of these specimens are preserved and registered in the National Museum of Victoria as C.11488 ♂, C.11489 ♀, C.16009 ♀, C.16011 ♂ and C.16151 ♀.

I began the survey by experimenting with a method of capturing bats that involved stretching strands of fishing line across a dam several cm above the water surface, or over concrete water tanks 4.25 by 4.25 metres which protruded about a metre above the ground. The lines used were monofilament nylon fishing line ranging in diameter from 0.1 to 0.2 mm (as stated by the manufacturers), and with breaking strain from about 0.8 to 1.5 kg.

On 9 February 1974, two separate parallel lines 3 to 4 cm above the water and perhaps a metre apart were stretched across a tank on the south side of Currays Hill, 6.4 km east of Daylesford. Of the many bats which collided with these lines during the 2½ hours following dusk, 10 crashed into the water and were captured: 6 female *Eptesicus pumilus*, 2 female *Chalinolobus morio*, and 2 *Pipistrellus tasmaniensis* (C.11488 and C.11489) which were sent to Mr J. McKean (CSIRO Division of Wildlife Research) who confirmed the identification. This was the second

* 101 Brougham Street, Kew

night during which I had tried the method. The first time was at the same tank on 2 February, and using one line a male *Eptesicus* was captured.

On subsequent occasions, using mist nets in addition to the line method, the pipistrelle accounted for about 25% of the total of 219 captures, while *Eptesicus* accounted for 43%, and the remaining 5 species combined, 32%. Despite the possible selectiveness in these techniques, I consider the pipistrelle to be one of the commoner species in the area.

Pipistrelles were captured at 4 tanks and 10 dams in all three forest types defined by the LCC Report (1973). Habitat preference could not be determined due to the great disparity in efficiency of the techniques when used on tanks compared with dams which were less successful; the tanks were in forest type III, the dams in the other two forest types.

The LCC vegetation classification is a modification of Specht's vegetation system (LCC, 1973: 63) and open forest I, II, and III are rough equivalents of Specht's low open forest, open forest and tall open forest respectively.

Vegetation and precipitation in the Daylesford region are described and mapped by the LCC (1973):

Open forest III. Forest 28 to 40 metres in height, of Messmate *Eucalyptus obliqua* and Narrow-leaved peppermint often in association with Candlebark *E. rubida* and Manna Gum *E. viminalis*, typically with a shrubby understory and Forest Wire-grass *Tetarrhena juncea*. It occurs along the divide which is commonly of 600 to 800 metres elevation and around 1,000 mm rainfall.

Open forest II. Forest 15 to 28 metres in height and of similar species composition to open forest III but with an understory of low open shrubs

and tussock grass. Its main occurrence is on sites intermediate in elevation and rainfall, and in addition is interspersed with type III over much of the divide, and also occurs on the better sites to the north of Daylesford.

Open forest I. Forest less than 15 metres in height of Red Stringybark *E. macrorrhyncha*, Messmate, Long-leaved Box, Red Box *E. polyanthemos*, Grey Box *E. microcarpa* and Yellow Box *E. melliodora*, with a sparse ground cover of tussock grass often with low open shrubs. Open forest I is found in the lowlands to the north of the area between Daylesford and Guildford where sites are much poorer, of 300 to 420 metres elevation and annual rainfall around 600 to 700 mm.

Ectoparasites were collected but await identification.

Dartmouth Dam, 1975

A specimen was obtained on 21 April 1975 during a fauna survey of the Dartmouth Dam inundation area (lat. 36° 34' S, long. 147° 36' E) conducted by the Fisheries and Wildlife Division (Thomas and Gilmore 1976 in press). It was shot at dusk by Alex Gilmore in a clearing adjacent to the Dart River one kilometre upstream from its junction with the Mitta Mitta River, and is preserved in spirit as C.14845 in the National Museum of Victoria. This specimen is a female with undeveloped teats and and forearm measurement of 50 mm.

Vegetation along the river consists of Northern Swamp Gum *Eucalyptus camphora* and thickets of *Leptospermum phyllicoides* and *L. brevipes* with low open forest (Specht, 1970) of Narrow-leaved Peppermint *E. radiata* on the adjoining river flats, and Broad-leaved Peppermint *E. dives* and Long-leaved Box *E. goniocalyx* on the surrounding hills.

The elevation of the site is approxi-

mately 305 metres and average annual rainfall about 1,200 mm.

Dargo, 1976

An adult male pipistrelle was captured on 2 January 1976 on the Dargo High Plains by Boyde Wykes of Zoology Department, Monash University and is lodged with the National Museum as C.16131. It was caught in one of several mist nets erected around a dam on the Dargo High Plains Road, 33 km north from Dargo (lat. $37^{\circ} 28' S$, long. $147^{\circ} 15' E$). Other species netted at the same site on this and the previous night were released and identified by Boyde Wykes as *Nyctophilus geoffroyi*, *N. timoriensis*, *Eptesicus pumilus* and *Chalinolobus morio*. The dam appeared to be the only water source in the area.

No site details are available.

Forearm length and identifying characteristics

Descriptions of the pipistrelle in the literature are mostly incomplete. Dobson (1878) gave probably the most thorough diagnosis (under *Vesperugo krefftii*), and Troughton (in Le Souef and Burrell 1926) was also useful. Tate (1942) was primarily concerned with cranial and dental features. Lord and Scott (1924) give the forearm length as 45 mm, apparently based on Dobson. However, Dobson gives only one forearm measurement of 1.9 inches (48 mm) for a mainland specimen. Four female specimens from Tasmania in the Queen Victoria Museum, gave forearms of 48 mm and 50 mm (measured fresh prior to skinning), and 47 mm and 48.5 mm for bats that had been in spirit for about 3 months (R. H. Green, pers. comm.).

At Daylesford bats were not individually marked on release but the forearm lengths of 29 female cap-

tures ranged from 49-53.5 mm with mean 51 mm, and 15 male captures had a range of 49-53 mm and again a mean of 51 mm.

When attempting to identify a pipistrelle one should consider a large vespertilionid with the snout naked anterior to the eyes, and slender ears that project well above the fur. The ears have a characteristic notch on the outer margin near the tip (see cover photograph). While the drawing in Ride (1970: 172) exhibits the naked snout and long projecting ears, the ear notch is unfortunately not visible due to the angle from which it has been drawn.

There are three south-eastern Australian Vespertilionidae of comparable size to the pipistrelle. The Bent-wing Bat *Miniopterus schreibersii* and Goulds Bat *Chalinolobus gouldii* are readily distinguished by their ears which are about as broad as long, and do not project far above the fur. The Bent-wing is also distinguished by the characteristic wing fold of the third digit. According to Troughton (1967) the species with which the pipistrelle is most likely to be confused is the Broad-nosed Bat *Nycticeius rueppellii*. I have not seen live specimens of the latter but its external characteristics are apparently

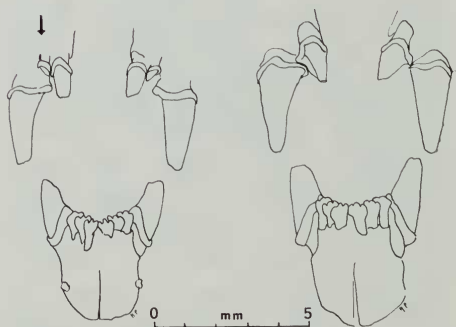


Diagram showing minute upper second incisor in *Pipistrellus* (left), which is absent in *Nycticeius* (right).

similar to *P.tasmaniensis*. The distinguishing feature generally cited in the literature is the absence of the minute second upper incisor tooth in *Nycriccius* (see diagram).

Acknowledgements

I am grateful for assistance given by R. M. Warneke of the Fisheries and Wildlife Division, and E. Hamilton-Smith, for reading the manuscript and their resulting suggestions, and to J. M. Dixon of the National Museum for checking the draft and allowing access to the collections. Drawing equipment was loaned by Lee Ahere. Boyde Wykes of Monash University and Sandy Gilmore of the Fisheries and Wildlife Division kindly supplied information concerning their locality records. The fine photograph was taken by Alan Hartup of Newstead.

REFERENCES

Brunner, H., R. L. Amor and P. L. Stevens (1976). The use of predator scat analysis in a maminal survey at Dartmouth in north-eastern Victoria. *Australian Wildlife Research* 3 (1): 85-90.

Dobson, G. E. (1878). Catalogue of the Chiroptera in the collection of the British Museum. British Museum, London.

Hamilton-Smith, E. (1964). Australian Cave Bats. A provisional guide to identification. CSIRO Division of Wildlife Research, Canberra.

Iredale, T. and E. Troughton (1934). A checklist of the mammals recorded from Australia. *Mem. Aust. Mus.* 6: 1-122.

Kirkpatrick, T. H. (1966). Mammals, birds and reptiles of the Warwick District, Queensland. 1 Introduction and mammals. *Qld. Journal Agric. and Animal Sciences* 23: 591-8.

Land Conservation Council (1972). Report on the South Gippsland Study Area — District 1.

Land Conservation Council (1973). Report on the Melbourne Study Area.

Lord, C. E. and H. H. Scott (1924). A synopsis of the vertebrate animals of Tasmania. Oldham, Beddome and Meredith, Hobart.

Le Souef, A. S. and H. Burrell (1926). The wild animals of Australasia. With a chapter on bats by Ellis Le G. Troughton. Harrup and Co., London.

Ride, W. D. (1970). A guide to the native mammals of Australia. Oxford University Press, Melbourne.

Specht, R. L. (1970). Vegetation, in "The Australian Environment". Ed. G. W. Leeper. CSIRO and Melbourne University Press.

Tate, G. H. H. (1942). Results of the Archbold Expeditions No. 47. Reviews of the vespertilionine bats, with special attention to genera and species of the Archbold Collections. *Bull. Amer. Mus. Nat. Hist.* 80: 221-297.

Thomas, D. J. and A. M. Gilmore (1976 in press). The terrestrial vertebrate fauna from the Dartmouth Dam Inundation Area. *Australian Wildlife Research*.

Troughton, E. (1967). Furred Animals of Australia. Angus & Robertson, Sydney. 9th Edition.

Wakefield, N. A. (1967). Mammal bones in the Buchan District. *Vic. Nat.* 84(7): 211-214.

Wakefield, N. A. (1971). Distribution data of Victorian mammals. *Vic. Nat.* 88(2): 48-50.

bold Expeditions Nu. 47. Reviews of the

Winner of 1976 Natural History Medallion

The Natural History Medallion for 1976 has been awarded to Winifred M. Curtis, M.Sc., Ph.D.(Lond.), F.L.S. Dr. Curtis was first nominated for the award in 1972 by the Society for Growing Australian Plants (Tasmanian Region), and the nomination was supported in subsequent years by the North East Tasmania Field Naturalists' Club and the Latrobe Valley Field Naturalists' Club. This is the thirty-sixth year of the

award and the first time it has gone to a Tasmanian.

Dr. Curtis was for many years lecturer in Botany at the University of Tasmania and is a leading authority on that State's flora. Her publications include "A Student's Flora of Tasmania", and the text which accompanies Margaret Stones' paintings in "The Endemic Flora of Tasmania" of which five volumes have been published.